IN THE CLAIMS:

1. (Currently Amended) A flow sensor comprising:

a flexible membrane; and

a plurality of sensors, ~~at least one of~~ the plurality of sensors being ~~operatively connected to~~ positioned on the flexible membrane, at least one of the plurality of sensors being adapted for detecting ambient temperature, at least one of the plurality of sensors being adapted for detecting pressure of ~~the~~ a medium, and at least one of the plurality of sensors being specifically adapted for ~~detecting~~ sensing a flow rate of the medium independent of detecting ambient temperature and pressure.

2. (Original) The flow sensor as defined by Claim 1, wherein the medium includes at least one of a gas, liquid, composition, and slurry.

3. (Original) The flow sensor as defined by Claim 1, further comprising:

a wafer, the wafer including a cavity; and

a substrate, the wafer being bonded to the substrate, the cavity in the wafer being substantially covered by the substrate, at least a portion of the wafer disposed above the cavity including the flexible membrane.

4. (Original) The flow sensor as defined by Claim 3, wherein at least one of the wafer and the substrate includes silicon.

5. (Original) The flow sensor as defined by Claim 1, further comprising an isolation layer, the isolation layer being disposed between the at least one of the plurality of sensors and the flexible membrane.

6. (Original) The flow sensor as defined by Claim 5, wherein the isolation layer includes silicon dioxide.

7. (Original) The flow sensor as defined by Claim 1, wherein the plurality of sensors includes at least one resistor.

8. (Original) The flow sensor as defined by Claim 1, wherein the plurality of sensors includes at least four resistors, the at least four resistors being operatively connected in a Wheatstone bridge configuration.

9. (Original) The flow sensor as defined by Claim 1, wherein the at least one sensor adapted for detecting pressure is adapted for detecting deflection of the flexible membrane in response to the pressure of the medium.

10. (Original) The flow sensor as defined by Claim 1, wherein the at least one sensor adapted for detecting ambient temperature is selectively isolated from the plurality of sensors.

11. (Original) The flow sensor as defined by Claim 1, wherein the at least one sensor adapted for detecting the flow rate of the medium includes a constant temperature anemometer.

12. (Original) The flow sensor as defined by Claim 1, wherein the plurality of sensors is operatively connected to the flexible membrane.

13. (Original) The flow sensor as defined by Claim 1, wherein the flow sensor is adapted for mounting within a conduit.

14. (Currently Amended) A method of sensing a flow rate of a medium, the method comprising the steps of:

providing a flexible membrane;

~~coupling at least one of~~ positioning a plurality of sensors ~~operatively to~~ on the flexible membrane;

detecting ambient temperature by at least one of the plurality of sensors;

detecting a pressure of a medium by at least one of the plurality of sensors; and

~~detecting~~ sensing a flow rate of the medium by at least one of the plurality of sensors specifically adapted for sensing the flow rate of the medium independent of detecting ambient temperature and pressure.

15. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, wherein the medium includes at least one of a gas, liquid, composition, and slurry.

16. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, further comprising the steps of:

providing a wafer, the wafer including a cavity;

providing a substrate; and

bonding the wafer to the substrate, the cavity in the wafer being substantially covered by the substrate, at least a portion of the wafer disposed above the cavity including the flexible membrane.

17. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, further comprising the step of disposing an isolation layer between at least one of the plurality of sensors and the flexible membrane.

18. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, wherein the plurality of sensors includes at least four resistors, the method further comprising the step of coupling the at least four resistors operatively in a Wheatstone bridge configuration.

19. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, further comprising the step of detecting deflection of the flexible membrane by the at least one of the plurality of sensors detecting the pressure of the medium.

20. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, further comprising the steps of:

isolating selectively the at least one sensor adapted for detecting ambient temperature from the plurality of sensors; and

determining a resistance of the at least one sensor adapted for detecting ambient temperature, the resistance being representative of the ambient temperature.

21. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, wherein the step of detecting the flow rate of the medium by at least one of the plurality of sensors further comprises the steps of:

maintaining the at least one of the plurality of sensors detecting the flow rate of the medium at a predetermined temperature with a heating element; and

determining an electrical current through the heating element, the electrical current being representative of the flow rate of the medium.

22. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, further comprising the step of coupling the plurality of sensors operatively to the flexible membrane.

23. (Original) The method of sensing a flow rate of a medium as defined by Claim 14, further comprising the step of compensating the flow rate detected by at least one of the plurality of sensors with at least one of the ambient temperature and the pressure of the medium.

24. (New) The flow sensor as defined by Claim 8, wherein the at least four resistors include a first set of resistors and a second set of resistors, the first set of resistors being disposed at opposing sides of the Wheatstone bridge configuration, the second set of resistors being disposed at opposing sides of the Wheatstone bridge configuration, the first set of resistors comprising a first elongation, the second set of resistor comprising a second elongation, the first elongation being opposite in sense to that of the second elongation.

25. (New) The flow sensor as defined by Claim 24, wherein the first elongation is substantially equivalent to but opposite in sense from that of the second elongation.

26. (New) The flow sensor as defined by Claim 24, wherein at least one of the first elongation and the second elongation is determined by placement of the at least four resistors on the flexible membrane.

27. (New) The flow sensor as defined by Claim 24, wherein the medium includes a flow direction, the first set of resistors being longitudinally disposed substantially parallel with the flow direction, the second set of resistors being longitudinally disposed substantially perpendicular to the flow direction.

28. (New) The method of sensing a flow rate of a medium as defined by Claim 18, wherein the at least four resistors include a first set of resistors and a second set of resistors, the method further comprising:

disposing a first set of resistors at opposing sides of the Wheatstone bridge configuration;

disposing the second set of resistors at opposing sides of the Wheatstone bridge configuration, the first set of resistors comprising a first elongation, the second set of resistor comprising a second elongation; and

providing the first elongation opposite in sense to that of the second elongation.

29. (New) The method of sensing a flow rate of a medium as defined by Claim 28, further comprising providing the first elongation as substantially equivalent to but opposite in sense from that of the second elongation.

30. (New) The method of sensing a flow rate of a medium as defined by Claim 28, further comprising determining at least one of the first elongation and the second elongation by placement of the at least four resistors on the flexible membrane.

31. (New) The method of sensing a flow rate of a medium as defined by Claim 28, wherein the medium includes a flow direction, further comprising:

disposing longitudinally the first set of resistors substantially parallel with the flow direction; and

disposing longitudinally the second set of resistors substantially perpendicular to the flow direction.

32. (New) A flow sensor comprising:

a flexible membrane; and

a plurality of sensors, the plurality of sensors being positioned on the flexible membrane, at least one of the plurality of sensors being adapted for detecting ambient temperature, at least one of the plurality of sensors being adapted for detecting pressure of a medium, and at least one of the plurality of sensors being specifically adapted for sensing a flow rate of the medium, the plurality of sensors including at least four resistors operatively connected in a Wheatstone bridge configuration.